VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2009 FISH TISSUE AND SEDIMENT MONITORING PLAN
WATER MONITORING AND ASSESSMENT

May 1, 2009

Introduction

The Virginia Department of Environmental Quality (DEQ), Office of Water Monitoring and Assessment is responsible for the design and execution of the Statewide Fish Tissue and Sediment Monitoring Program. This document provides information concerning the proposed stations for monitoring fish tissue and sediment during 2009 and the rationale for the station selections.

Objective

The objective of the Statewide Fish Tissue and Sediment Monitoring Program is to systematically assess and evaluate, using a multi-tier screening, water bodies in Virginia in order to identify toxic contaminant(s) accumulation with the potential to adversely affect human users of the resource. A second objective of the program is to determine the presence of toxic chemical contaminants in the aquatic environment which have the potential to adversely affect the aquatic biological community. Data collected will be used to quantify human health risks and ecological/environmental health conditions. In addition, follow-up studies are conducted when problems are found and/or when recommended by the Virginia Department of Health (VDH) through a Memorandum of Agreement between VDH and DEQ. VDH uses data generated by this program to assess the need for issuing or modifying fish consumption advisories. The DEQ employs the data to assess water quality for 305(b) Report /303(d) Impaired Water Listing and Total Maximum Daily Load (TMDL) determinations.

Sampling Design

The water bodies of Virginia are separated into fourteen river basins or subbasins (see Table 1). In the past, fish tissue and sediment were sampled in all fourteen of the river basins within a five-year cycle following procedures stated in the DEQ Quality Assurance/Quality Control Project Plan for the Fish Tissue and Sediment Monitoring Program (1998). In April 2000, the General Assembly amended section 62.1-44.19:5 of the code of Virginia which instructed the DEQ to sample all of the river basins within a three-year rotational cycle contingent upon available funding. Between 2001 and 2003 a three year rotation was employed, but due to funding cuts and staff reductions after 2003, the program has reverted back to the original five year cycle.

Table 1. River Basins in Virginia.

	River Basins	Basin Code
1)	Potomac River Subbasin	1A
2)	Potomac River-Shenandoah River Subbasin	1B
3)	James River	2-
4)	Rappahannock River	3-
5)	Roanoke River	4A
6)	Yadkin River	4B
7)	Chowan-Chowan River Subbasin	5A
8)	Chowan-Albemarle Sound Subbasin	5B
9)	Tennessee and Big Sandy River-Big Sandy Subbasin	6A
10)	Tennessee and Big Sandy River-Clinch Subbasin	6B
11)	Tennessee and Big Sandy River-Holston Subbasin	6C
12)	Chesapeake Bay, Atlantic Ocean, and Small Coastal	7-
13)	York River	8-
14)	New River	9-

The monitoring sites which have been selected for the 2009 routine statewide sampling season will be primarily located in the following river basins: New River Basin and Potomac River drainages. A total of 81 fish tissue and sediment sampling stations have been selected. The list of sampling stations includes the routine monitoring stations and special requests. All of the sampling sites are ranked from 1 to 2 with 1 being the high priority and 2 the low priority. The higher rank is based on known or potential water quality problems at the sampling location, special requests by other DEQ units, VDH or citizen groups, and/or if the sampling location is a relatively intensive resource for recreational or commercial fishing. Extensive effort will be made to complete all of the stations selected, but if equipment problems and/or severe weather impact(s) the sampling schedule, or if there are unanticipated budget reductions or staff limitations, priority will be given to the higher ranked stations.

The sampling sites include freshwater and brackish or saltwater locations. The samples that will be collected at each freshwater station include one sediment sample and three to five tissue composite samples (5-10 individuals of the same species per composites) consisting of fish species that are typically consumed by humans. Samples will include at least one bottom feeder (e.g. catfish sp.), which may be highly exposed to chemically contaminated sediments compared to other species, and two to four upper and middle trophic level feeders (e.g. bass and sunfish species, respectively.), which may be exposed to chemical contaminants via biomagnification.

Collection of targeted species for tissue analysis at the brackish and saltwater sites may be problematic since only 10-15% of the fish and shellfish species at the stations are year-round residents and few of the resident species are typically consumed by humans (Murdy et. al. 1997). It is likely that sample collection techniques will yield several species of migratory fish and shellfish that are consumed by humans and a few resident fish species that are not consumed by humans. Contaminants found in migratory fishes may not reflect local pollution problems but may be used to calculate human health risks from consumption. Contaminants found in sediment and resident fishes may be used to identify local inputs of bioaccumulative contaminants. Therefore, the samples that will be collected at each brackish or saltwater station include one sediment sample and three to five composite samples (5-10 individuals of the same species per composite) consisting of an edible migratory, an edible or non-edible resident, and an edible or non-edible bottom species. For a detailed list of species that will be targeted at each brackish or saltwater station (see Table 2).

The entire data set should help determine if any unacceptable human health risks are associated with fish consumption, and if local inputs of bioaccumulative contaminants are in tissue and/or sediment at levels of concern. Samples collected will be analyzed for metal and/or organic contaminants by contract laboratories at the College of William and Mary - Virginia Institute of Marine Science.

Station Selection Criteria

The stations in each basin have been selected to produce site specific conclusions and provide spatial coverage of the entire basin. The following criteria were used to select the 2009 sampling stations:

- Historical Data Review
- Spatial Distribution

- Specific Water Quality Problems
- Major Tributary Status
- External Request from other VADEQ offices, State Agencies, and Citizen Groups
- Point Source Input
- Nonpoint Source
- Major Fishery

The attached references were used in selecting the sampling stations. The water body ID number, station number, priority rank, river mile, latitude, longitude, county, criteria for selection, and corresponding USGS topographical survey map name for each proposed sampling station are provided (see Table 3). Summary maps showing the location of all of the proposed sampling stations are attached (see figures 1-5).

Sample Collection and Reporting

Fish tissue and sediment samples will be collected in the early spring through late fall, 2009. Analytical data for all of the samples should be received from the laboratory by the end of June 2010. The data will be tabulated as received and sent to VDH per an October 2000 Memorandum of Agreement between the VDH and DEQ. VDH will make an evaluation regarding potential human health impacts due to consumption of contaminated fish and issue fish consumption advisories or bans as needed. DEQ will assess the data in the next 305(b) assessment cycle.

The tabulated data will also be sent to the water quality monitoring and assessment managers for review and use in 305(b) reporting. The data are then posted on the DEQ web site at: www.deq.virginia.gov/fishtissue/ for use by the citizens of the Commonwealth and the public at large.

Table 2. Target species at each of the brackish water or saltwater stations.

Migratory Fish (Normally consumed by humans)	Resident Fish (Some may not be consumed by humans)	Benthic Fish/Shellfish (Some may not be consumed by humans)
Striped Bass	White Perch	Oyster spp.
Spot	Yellow Perch	Clam spp.
Atlantic Croaker	Killifish, Banded	Blue Crab
Weak Fish	Killifish, Striped	Summer Flounder
Black Sea Bass	Killifish,Rainwater	Smallmouth Flounder
Spotted Seatrout	Killifish, Marsh	Oyster Toadfish
Black Drum	Killifish, Spotfin	Hogchoker
Red Drum	Mummichogs	Tongue Fish
Silver Perch	Sheepshead Minnow	Channel Catfish
Northern Kingfish	Silverside, Inland	White Catfish
Southern Kingfish	Silverside, Rough	
Gulf Kingfish	Silverside, Atlantic	
Bluefish	Bay Anchovy	
Hickory Shad		
Alewife		
American Shad		
Blueback Herring		

Table 3. 2009 Fish Tissue & Sediment Study Sites **Revised 5/1/09**

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
	Potomac and Shenandoah River Basin									
1	1AACO012.78	Lake Accotink	1	N-A15L	N38° 47.717	W77° 13.117	Fairfax	Falls Church	PCB's Elevated in Fish Tissue	2007 Data
2	1ABRB002.15	Broad Run near Rt. 7 bridge	1	N-A09R	N39 02.801'	W77 25.962'	Loudoun	Sterling	Hg in Smallmouthbass &Yellow Perch, As in Am. Eel, PCB in Am. Eel	2004 Fish Tissue Data.
3	1ABUL001.57	Bull Run/Occoquan Res.-upper	1	N-A23R	N38 44.518'	W77 23.247'	Fairfax	Independent Hill	Spatial Distribution, Major Fishery	
4	1ABUL006.47	Bull Run near Popes Head Creek	1	N-A23R	N38 46.319'	W77 24.823'	Prince William	Manassas	Pb in Carp, As in LgMouth Bass, PCB in Carp	2004 Fish Tissue Data.
5	1ABUL010.28	Bull Run near Rt. 28 bridge	1	N-A23R	N38 48.183'	W77 26.983'	Prince William	Manassas	Se in Lg Mouth Bass & Channel Catfish, PCB in Channel Catfish	2004 Fish Tissue Data.
6	1ACOA004.24	Coan River near Coan	1	P-A34E	N37 57.444'	W76 28.953'	Northumberland	Heathsville	Pb in Mummichog & Bluefish, Spatial Distribution PCB Advisory??, PCB in Giz. Shad	2004 Fish Tissue Data.
7	1ACUB002.61	Cub Run Rt. 658 Compton Road	1	N-A22R	N38 49.268'	W77 27.956'	Fairfax	Manassas	PCB, Hg & Se in Flathead Catfish, Se	2004 Fish Tissue Data.
8	1ADIF000.86	Difficult Run near Rt. 193	1	N-A11R	N38 58.555'	W77 14.763'	Fairfax	Falls Church	Heptachloroepoxide in Am. Eel, Hg in Am Eel	2004 Fish Tissue Data.
9	1AGOO002.38	Goose Creek near Rt. 7	1	N-A08R	N39 05.133'	W77 30.683'	Loudoun	Leesburg	Hg in Sm.mouth Bass, As in Redbreast, PCB in Am. Eel	2004 Fish Tissue Data.
10	1AINA000.88	Indian Run near Cherokee Avenue	1	N-A13R	N38 48.407'	W77 09.546'	Fairfax	Annandale	PCB & Se in Creek Chub	2004 Fish Tissue Data.
11	1ALOW003.71	Lower Machodoc Creek	2	P-A32E	N38° 06.491'	W76° 38.435'	Westmoreland	Machodoc	Spatial Distribution	--
12	1AOCC002.47	Occoquan/Belmont bay near Buoy # 6	1	N-A25E	N38 38.343'	W77 13.181'	Fairfax	Fort Belvoir	Spatial Distribution, PCB in Lg Mouth Bass, White Perch, Channel Catfish & Carp, Pb in Striped Bass	2004, 2002, 1996 Fish Tissue Data.
13	1AOCC008.80	Occoquan Reservoir-lower	1	N-A24L	N38 42.122'	W77 17.640'	Fairfax	Occoquan	Spatial Distribution, Major Fishery	--
14	1APIM000.15	Pimmit Run near Rt. 120 bridge	1	N-A12R	N38 55.740'	W77 07.108'	Arlington	Washington	PCB, Total Chlordane & Heptachloroexpoxide in Am Eel	2004 Fish Tissue Data.
15	1APOW009.08	Lake Montclair (Powells Creek)	1	N-A26R	N38 37.067'	W77 21.326'	Prince William	Quantico	Se in LgMouth Bass & Redbreast Sunfish, As in Largemouth Bass, Hg in Lg Mouth Bass, Black Crappie & Channel Catfish, PCB in Carp	2004 & 2006 Fish Tissue Data.
16	1ASOH007.06	Burke Lake	1	N-A23R	N38° 45.592'	W77° 17.902'	Fairfax	Fairfax	Spatial Distribution, Major Fishery	--
17	1ASOT001.44	South Run near Rt. 215 bridge	1	N-A19R	N38° 45.300'	W77° 40.434'	Fauquier	Thoroughfar	As in Redbreast	2001 Fish Tissue Data
18	1AUMC001.36	Upper Machodoc Creek near Williams Creek	1	N-A30E	N38 19.250'	W77 03.133'	King George	Dahlgren	Spatial Distribution PCB Advisory??,Pb in Croaker & Giz. Shad, As in White Perch, PCB in Chan Catfish & Giz. Shad	2004 Fish Tissue Data.
19	1AUMC004.43	Upper Machodoc Creek near Rt. 218 bridge	1	N-A30E	N38 17.320'	W77 03.556'	King George	Dahlgren	As in Spot & Gizzard Shad, PCB in Gizzard Shad & Channel Catfish	2004 Fish Tissue Data.
20	1BBKN001.81	Sherando Lake	2	V-B31R	N37 55.495'	W79 00.199'	Augusta	Big Levels	Spatial Distribution, Major Fishery	--
21	1BBRY009.44	Briery Branch Lake	2	V-B18R	N38 27.019'	W79 09.636'	Rockingham	Redish Knob	Spatial Distribution, Major Fishery	--
22	1BCDR013.32	Cedar Creek near Rt. 628 bridge	1	V-B53R	N39° 04.658'	W78° 19.537'	Frederick	Middletown	Hg in Smallmouth Bass	2005 Fish Tissue Data.
23	1BCNG003.33	Lake Shenandoah	2	V-B29L	N38 22.855'	W78 50.157	Rockingham	Harrisonburg	Spatial Distribution, Major Fishery	--
24	1BCRO009.19	Lake Frederick	2	V-B56L	N39 02.571'	W78 09.505'	Frederick	Stephens City	Spatial Distribution, Major Fishery	--
25	1BDRI005.35	Arrowhead Lake near Luray	2	V-B38R	N38 38.531'	W78 23.365'	Page	Luray	Spatial Distribution, Major Fishery	--
26	1BLEW005.24	Lewis Creek near Old Staunton STP	1	V-B12R	N38 09.250'	W79 02.462'	Staunton	Staunton	PCB in W.Sucker and Chub	2005 Fish Tissue Data.
27	1ALOH007.93	Lake Curtis	2	N-A29L	N38 26.040'	W77 33.734'	Stafford	Storck	Spatial Distribution, Major Fishery	--
28	1BMDL013.61	Middle River @ Rt 778 @ Knightly	1	V-B15R	N38 13.768'	W78° 55.554'	Augusta	Ft Defiance	Special Request-VRO	--
29	1BNFS000.57	North Fork Shenandoah River near Rt. 340 bridge downstream of DGIF Boat Launch	1	V-B51R	N38 56.941'	W78 11.864'	Warren	Front Royal	PCB in Chan. Catfish, & Carp, Hg in LgMouth Bass, Pb in Rock in Bass	2005 & 1996 Fish Tissue Data.
30	1BNFS054.75	North Fork Shenadoah River near Willow Grove near DGIF Boat Ramp	1	V-B50R	N38 50.750'	W78 31.733'	Shenandoah	Edinburg	As in Sm Mouth Bass	2005 Fish Tissue Data.
31	1BNFS093.53	North Fork Shenandoah River near Cootes Store	1	V-B45R	N38 38.248'	W78 51.132'	Rockingham	Timberville	Hg in Chan. Catfish, As in Green Sunfish, Pb in Rock Bass	2005 Fish Tissue Data.
32	1APAR001.78	Parish Run-Lake St. Clair	1	V-B07R	N39 16.184'	W78 12.259'	Frederick	White Hall	VRO-Special Request	PCB
33	1BSHN028.15	Shenandoah River near Rt. 7	1	V-B58R	N39 06.046'	W77 57.904'	Clarke	Ashby Gap	PCB in Chan. Catfish, & Shorthead Redhorse Sucker, Hg in Smallmouth Bass	2005 Fish Tissue Data.
34	1BSHN038.27	Shenandoah River near Rt. 50	1	V-B57R	N39 02.481'	W77 59.948'	Clarke	Ashby Gap	PCB in Largemouth Bass, Carp, & Redhorse Sucker, Hg in Lg Mouth Bass & Chan. Catfish	2005 Fish Tissue Data.
35	1BSHN053.63	Shenandoah River downstream of I-66	1	V-B55R	N38 57.797'	W78 10.760'	Warren	Front Royal	PCB in Largemouth Bass, Carp, & Chan. Catfish, HG in Sm.& Lg Mouth Bass	2005 Fish Tissue Data.
36	1BSSF000.19	South Fork Shenandoah River near Riverton	1	V-B41R	N38 56.628'	W78 11.430'	Warren	Front Royal	PCB in L. Mouth Bass, Chan. Catfish, & Carp	2005 Fish Tissue Data.
37	1BSSF054.20	South Fork Shenandoah River near Whitehouse Landing	1	V-B38R	N38 38.760'	W78 32.129'	Hamburg	Page	Hg in Whitesucker & Sm Mouth Bass	2005 Fish Tissue Data.
38	1BSSF063.17	South Fork Shenandoah River near Newport	1	V-B37R	N38 34.580'	W78 35.510'	Stanley	Page	PCB in L. Mouth Bass, Hg in Lg Mouth Bass & Redbreast Sunfish	2005 Fish Tissue Data.
39	1BSSF078.24	South Fork Shenandoah River near Shenandoah	1	V-B37R	N38 28.950'	W78 37.667'	Elkton West	Page	Hg in Whitesucker, Redbreast Sunfish, & Sm Mouth Bass	2005 Fish Tissue Data.

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
40	1BSTH000.19	South River near Rt. 659	1	V-B32R	N38 17.666'	W78 48.618'	Rockingham	Grottoes	PCB in Redhorse Sucker & Carp, Hg in Sm Mouth & Lg Mouth Bass	2005 Fish Tissue Data.
41	1BSTH004.21	South River near Grottoes	1	V-B32R	N38 17.033'	W78 50.067'	Grottoes	Augusta	Hg in Whitesucker, Redbreast Sunfish, & Sm Mouth Bass	2005 Fish Tissue Data.
42	1BSTH025.10	South River near DuPont Footbridge	1	V-B32R	N38 03.705'	W78 53.153'	Wayneboro West	Waynesboro	Hg in Redbreast Sunfish & Lg Mouth Bass	2005 Fish Tissue Data.
43	1BXXX000.18	Tams Lake (Unnamed Tributary to Lewis Creek)	1	V-B12L	N38 09.503'	W79 04.992'	Staunton	Staunton	As in Brown Trout & Carp	2005 Fish Tissue Data.
44	1BXXX000.66	Newman Pond at JMU (X Trib to Blacks Run)	1	V-B26L	N38 29.953'	W78 52.507'	Harrisonburg	Bridgewater	As & Hg in Largemouth Bass	2005 Fish Tissue Data.
	New River Basin									
45	9-BST021.26	Bluestone River near Yards, downstream Rt. 643 Falls Mills	1	S-N36R	N37 17.389'	W81 18.776'	Tazewell	Bramwell	Pb in White Sucker	1992 303D, 2000 Fish Tissue Data
46	9-BST029.57	Bluestone River @ 460 Bridge Bluefield	2	S-N36R	N37 14.123'	W81 17.402'	Tazewell	Cove Creek	Spatial Distribution, Major Fishery, Heptachlor in Tissue	1990 Tinger Report Page O2-9, 2000 Data (Non-Detect)
47	9-CPL003.10	Cripple Creek @ Rt 94	2	S-N09R	N36 51.582'	W80 58.874'	Wythe	Austinville	Spatial Distribution, 303 D List Fecal	2008 303 D List (Fecal) Page 3.5-121
48	9-CRK003.00	Crooked Creek near Rt. 635	1	S-N07R	N36 46.117'	W80 54.467'	Carroll	Galax	As in Bluehead Chub	2004 Fish Tissue Data.
49	9-DDD002.62	Dodd Creek near Rt. 696 bridge	1	W-N20R	N36 55.171'	W80 20.723'	Floyd	Floyd	Pb in Bluehead Chub & W. Sucker, Pb in N. Hog Sucker	2004 & 2000 Fish Tissue Data
50	9-LRI001.62	Little Reed Island Creek low water bridge downstream Wythe Co. line	1	W-N15R	N36 55.297'	W80 45.574'	Pulaski	Foster Falls	As in Northern Hog Sucker & Rock Bass	2004 Fish Tissue Data.
51	9-LRR001.39	Laurel Fork near state line	1	S-N37R	N37 18.671'	W81 20.119'	Tazewell	Bramwell	Pb in White Sucker & Rock Bass, Se in White Sucker, As in Rock Bass & White Sucker, PCB in N. HogSucker	2004 & 2000 Fish Tissue Data.
52	9-LVR001.34	Little River near Rt. 626	1	S-N04R	N36 35.513'	W81 02.965'	Grayson	Sparta East	As in Northern Hog Sucker	2004 Fish Tissue Data.
53	9-NEW030.15	New River near Glen Lyn	1	W-N29R	N37 22.337'	W80 51.693'	Giles	Narrows, VA-WV	Pb in Carp	2002 Fish Tissue Data
54	9-NEW066.90	New River at Whitethorne	1	W-N22R	N37 11.891'	W80 33.800'	Pulaski	Radford North	PCB in Fish Tissue	2000 Data
55	9-NEW075.53	New River near Rt. 114 bridge	1	W-N22R	N37 09.700'	W80 33.139'	Montgomery	Radford	PCB in Flathead Catfish	2004 Fish Tissue Data.
56	9-NEW085.94	New River downstream Claytor Dam	1	W-N18R	N37 05.270'	W80 34.770'	Pulaski	Radford South	Pb in SmMouthBass & White Sucker, As in SmMouth Bass, PCB in Carp	2004 Fish Tissue Data.
57	9-NEW088.86	New River Claytor Lake near Dam	1	W-N16L	N37 04.468'	W80 35.272'	Pulaski	Radford South	Pb in SmMouthBass & Flathead Catfish Carp (2000), As in Bluegill & SmMouth Bass	2000 & 2004 Fish Tissue Data.
58	9-NEW099.90	New River Claytor Lake Rt. 672	1	W-N16L	N37° 00.155'	W80° 40.944'	Pulaski	Dublin	Spatial Distribution, Major Fishery	--
59	9-NEW105.05	New River Claytor Lake near Hiwassee	1	W-N16L	N36 57.736'	W80 43.144'	Pulaski	Hiwassee	Hg in Flathead Catfish, As in G.Shad & Carp, PCB in Carp	2004 Fish Tissue Data.
60	9-NEW117.47	New River near Shot Tower State Park	1	S-N08R	N36 52.254	W80 52.229	Wythe	Foster Falls	Hg in LgMouth Bass, SmMouth Bass, & Carp, As in SmMouth Bass	2004 Fish Tissue Data.
61	9-NEW158.40	New River near Rt. 58 bridge	1	S-N04R	N36 36.841	W81 02.815	Grayson	Sparta East	Spatial Distribution PCB Advisory??,As in Carp, Hg in SmMouth Bass, Pb in Bluehead Chub	2004, 2002 & 2000 Fish Tissue Data.
62	9-NEW171.94	New River near Rt. 24	1	S-N04R	N36 34.486'	W81 09.308'	Grayson	Sparta East	Spatial Distribution PCB Advisory??, Hg in Smallmouth Bass, Rockbass, Flathead Catfish, & Carp, As in SmMouth, Flathead Catfish, & Carp	2004 Fish Tissue Data.
63	9-NEW176.85	New River near Rt. 93 bridge	1	S-N04R	N36 35.119'	W81 18.836'	Grayson	Mouth of Wilson	Spatial Distribution PCB Advisory??, Hg in Smallmouth Bass, Whitesucker, and Flathead Catfish, As in Rock Bass & SmMouth Bass	2004 & 2002 Fish Tissue Data.
64	9-PKC004.65	Peak Creek arm of Claytor Lake	1	W-N17L	N37 02.883'	W80 42.457'	Pulaski	Dublin	Hg & Pb in Carp, PCB in Carp	2004 Fish Tissue Data.
65	9-PKC007.82	Peak Creek near Rt. 99 bridge	1	W-N17R	N37 02.518'	W80 44.496'	Pulaski	Dublin	Pb in Rock Bass	2004 Fish Tissue Data.
66	9-RDC009.00	Reed Creek near Rt. 619 Grahams Forge	1	S-N11R	N36 55.912'	W80 53.655'	Wythe	Max Meadows	As in Rock Bass, SmMouth Bass, Carp, Pb in Carp, Se in SmMouth Bass, PCB in Carp	2004 Fish Tissue Data.
67	9-RIC000.50	Reed Island Creek	1	W-N14R	N36 55.626'	W80 44.811'	Pulaski	Hiwassee	Pb in Bluehead Chub, Se in Rock Bass, Pb in Bigmouth Chub	2004 & 2000 Fish Tissue Data.
68	9-SNC000.20	Stony Creek near Norcross	1	W-N28R	N37 11.086'	W80 41.829'	Giles	Pearisburg	Pb in SmMouth Bass & White Sucker, As in SmMouth Bass	2004 Fish Tissue Data.
69	9-WFC003.69	Wolf Creek near Rt. 724 bridge	1	W-N32R	N37 18.362'	W80 50.992'	Giles	Narrows	As in Rainbow Trout	2004 Fish Tissue Data.
70	9-WLK008.22	Walker Creek at Gaging Station	1	W-N25R	N37 16.158'	W80 42.524'	Giles	Pearisburg	Pb & As in Rock Bass	2004 Fish Tissue Data.
71	9-XAF002.38	Unnamed Trib to New R. Claytor Lake	2	W-N16L	N37 04.883'	W80 37.084'	Pulaski	Radford South	Spatial Distribution, Major Fishery	--
72	9-XBL000.20	Rural Retreat Lake	1	S-N10R	N36 51.941'	W81 16.410'	Wythe	Cedar Springs	Spatial Distribution, Major Fishery	--
	Tennessee & Big Sandy River Basin									
73	6BCAV002.88	Lake Witten (Cavitts Creek)	1	S-P01L	N37 10.268'	W81 31.195'	Tazewell	Tazewell North	Special Request, Hg in LgMouth Bass	2007 Data
74	6BPLL012.99	Big Cherry Reservoir (South Fork Powell River)	1	S-P18L	N36 50.7167'	W82 39.8833'	Wise	East Stone Gap	Special Request, Hg in LgMouth Bass	2007 Data

Site #	River Mile	Stream Name	Priority	WBID	Latitude	Longitude	City/County	Topo Name	Problem	Reference
75	6BSTO004.56	Stock Creek near Rt. 650 upstream Clinchport	1	S-P13R	N36 43.113	W82 45.023	Scott	Duffield	Special Request Hg in Smallmouth Bass	2007 Data
76	6CWLF006.55	Wolf Creek near Rt. 75 below Town of Abingdon	1	S-O06R	N36 38.482	W81 59.111	Washington	Abingdon	Special Request	2007 Data
	York River Basin									
77	8-QEN007.02	Waller Mill Reservoir	1	T-F26E	N37 18.226'	W76 42.124'	York	Williamsburg	Citizen Request	--
	Roanoke River Basin-Smith River Special Study Sites									
78	4ASRE033.19	Smith River, Rt. 701 Bridge	1	W-L53R	N36 42.066'	W79 55.984'	Henry	Martinsville West	Special Request BRRO-CO	TMDL Request
79	4ASRE026.77	Smith River, Above Martinsville Dam	1	W-L54R	N36 40.165'	W79 53.273'	Henry	Martinsville West	Special Request BRRO-CO	TMDL Request
80	4ASRE022.30	Smith River, Below Martinsville STP	1	W-L54R	N36 38.664'	W79 49.867'	Henry	Martinsville east	Special Request BRRO-CO	TMDL Request
81	4ASRE019.00	Smith River, Above Confluence with Marrowbone Creek	1	W-L54R	N36 36.883'	W79 49.383'	Henry	Martinsville East	Special Request BRRO-CO	TMDL Request

Fig. 1 Potomac and Shenandoah River Basin Sites (1"=16 Miles)

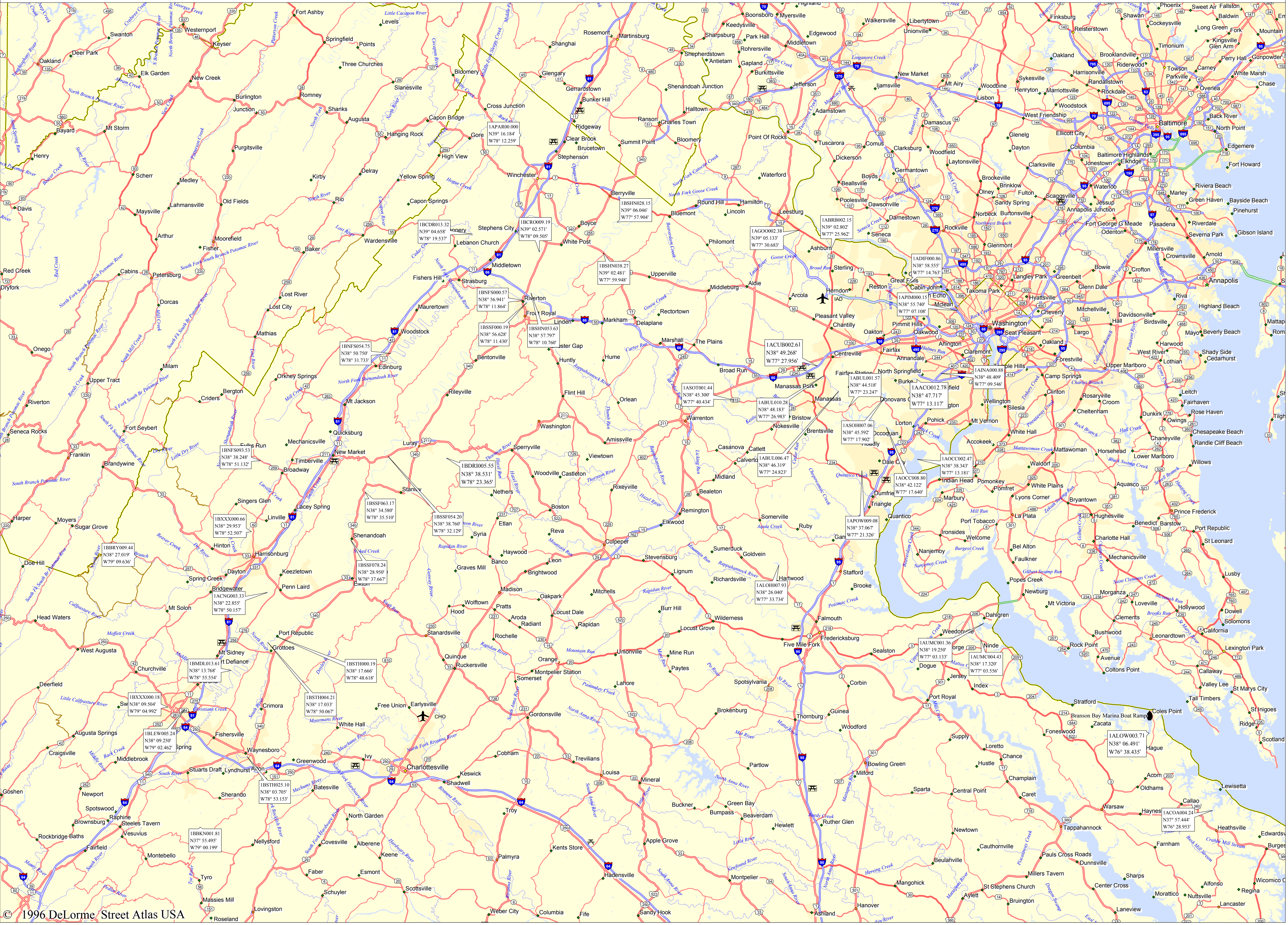


Fig. 2 New River Basin (1"=7.9 Miles)

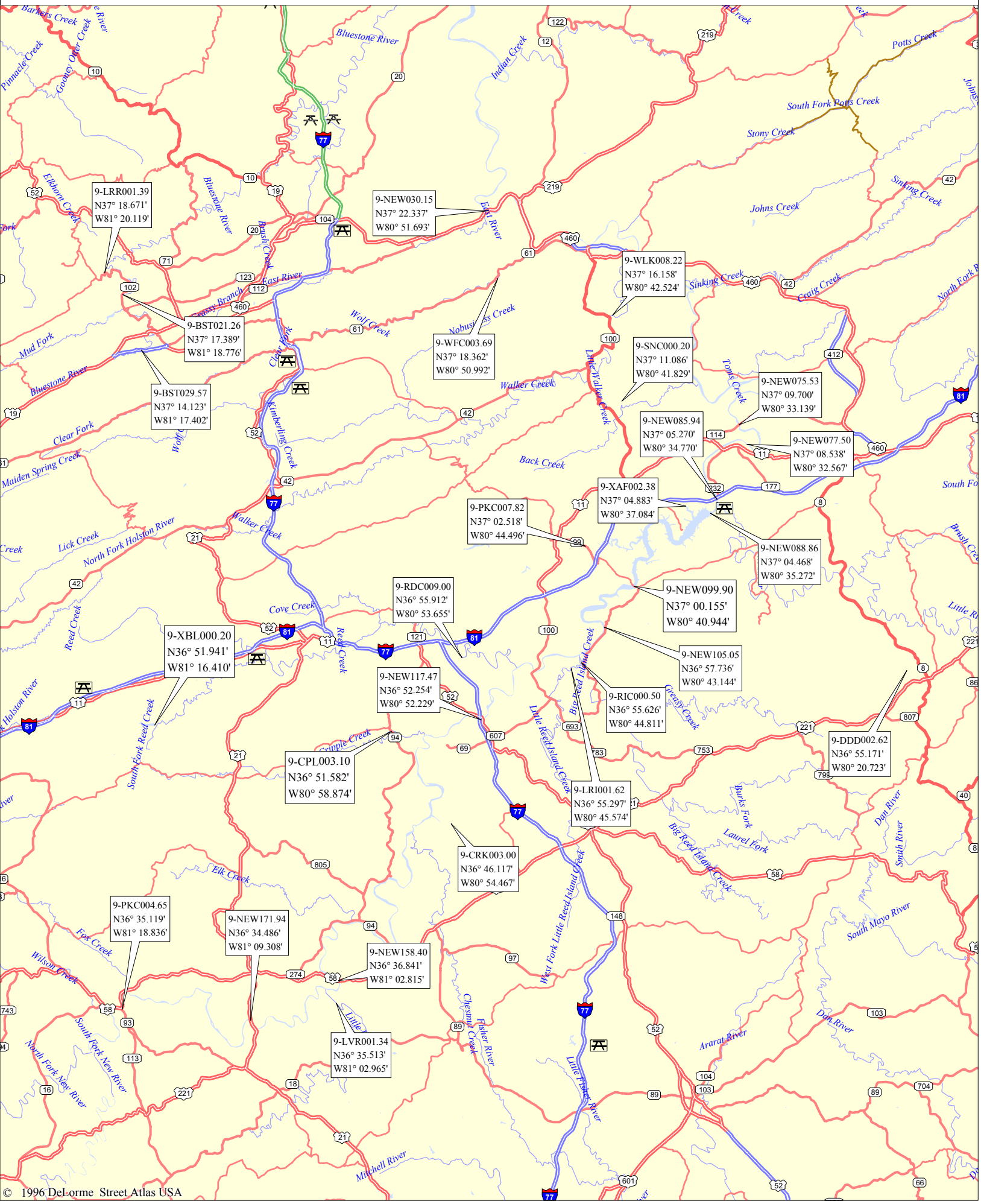


Fig. 3 Tennessee & Big Sandy River Basin (1"=13 Miles)

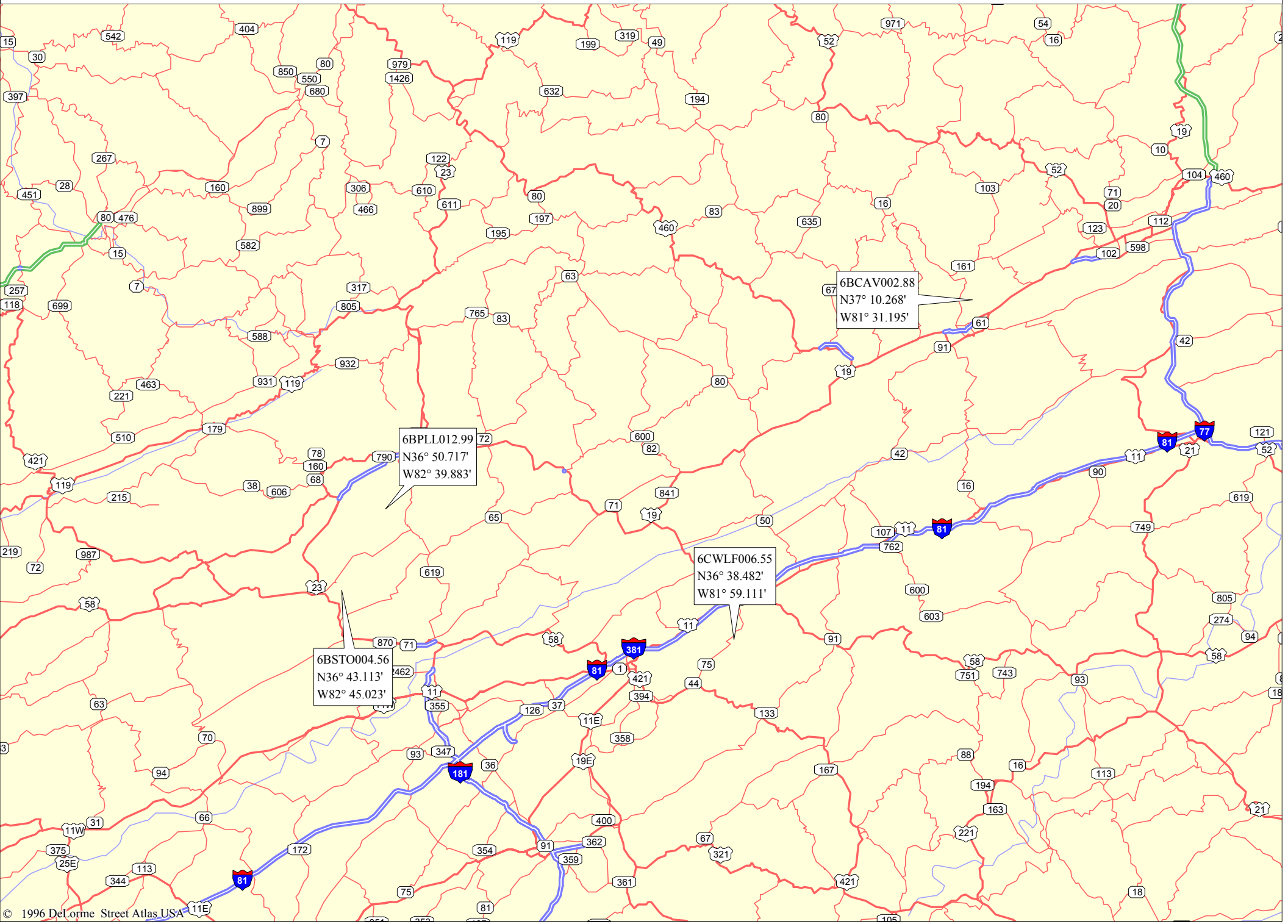


Fig. 4 York River Basin (1"=0.49 Miles)

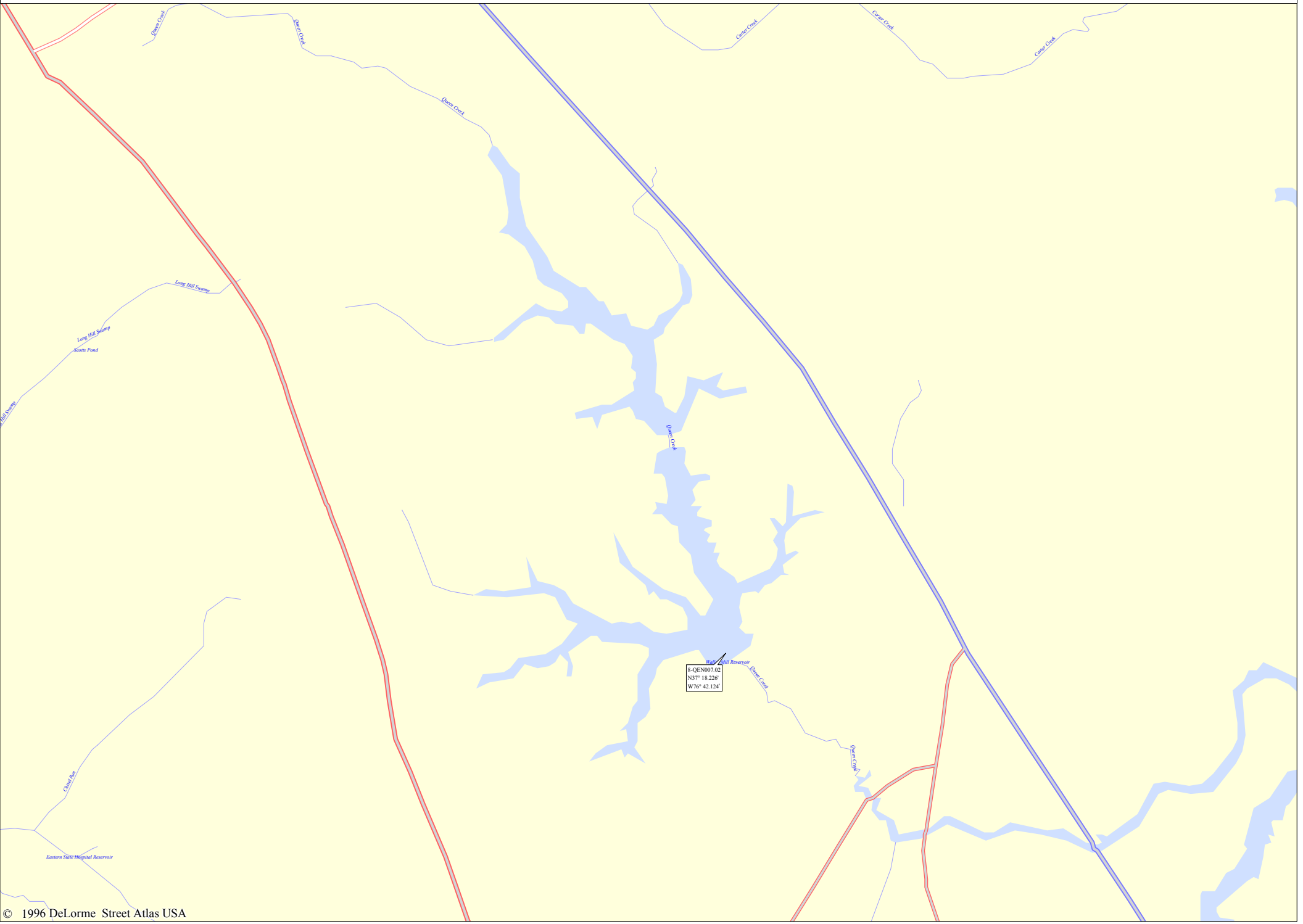
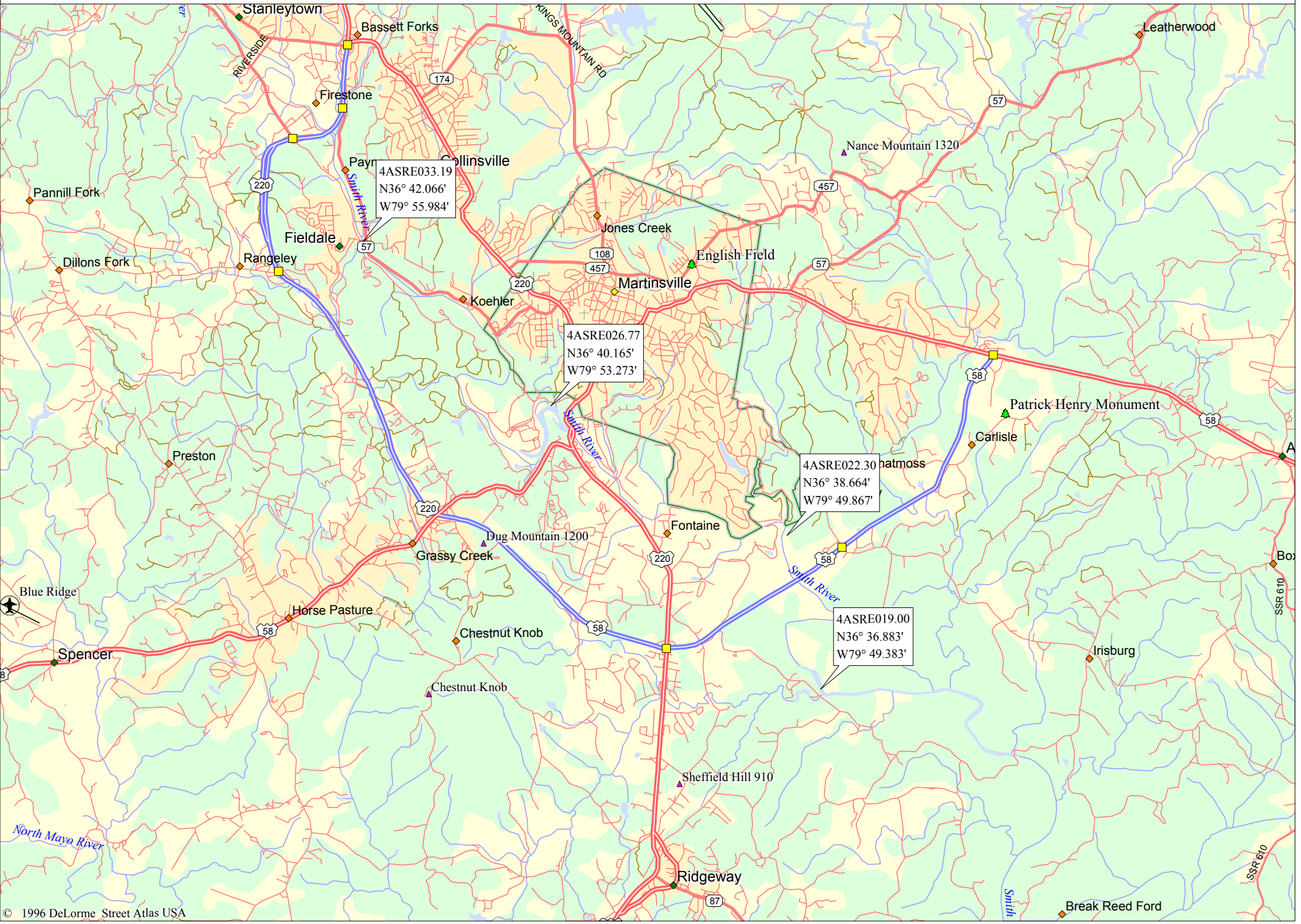


Fig. 5 Roanoke River Basin (1"=1.6 Miles)



References

Department of Environmental Quality. 2008. Virginia Water Quality Assessment. 2008 305 (b) Report to EPA Administrator and Congress for the Period January 1, 2001 To December 31, 2006. Richmond, Virginia

Department of Environmental Quality. 2006. Virginia Water Quality Assessment. 2006 305 (b) Report to EPA Administrator and Congress for the Period January 1, 2000 To December 31, 2004. Richmond, Virginia

Department of Environmental Quality. 2004. Virginia Water Quality Assessment. 2004 305 (b) Report to EPA Administrator and Congress for the Period January 1, 1998 To December 31, 2002. Richmond, Virginia

Department of Environmental Quality. 2003. Virginia Water Quality Assessment. 2002 305 (b) Report to EPA Administrator and Congress for the Period January 1, 1996 To December 31, 2000. Richmond, Virginia.

Department of Environmental Quality. 2002. Virginia 303 (d) TMDL Priority List. October 2002. Richmond, Virginia.

Department of Environmental Quality. 2008-1975. Statewide Fish Tissue and Sediment Monitoring Program Data Files. Richmond, Virginia.

Department of Environmental Quality. 2000. Virginia Water Quality Assessment. 2000 305 (b) Report to EPA Administrator and Congress for the Period January 1, 1994 To December 31, 1998. Richmond, Virginia.

Department of Environmental Quality. 1998. Quality Assurance/Quality Control Project Plan for the Fish Tissue and Sediment Monitoring Program. Richmond, Virginia.

Department of Game and Inland Fisheries. 2008. Virginia Freshwater Fishing Guide. Richmond, Virginia.

Memorandum of Agreement between the Virginia Department of Health and the Virginia Department of Environmental Quality for the Timely Transmission of Fish Consumption Advisory Information. October 2000.

Murdy, O.M., Ray S. Birdsong, J.A. Musick. 1997. Fishes of the Chesapeake Bay. Smithsonian Institute Press. Washington and London.

Tingler, J.N. et. al. 1990. Comprehensive Review of Selected Toxic Substances-Environmental Samples in Virginia State Water Control Board-Bulletin 583. Richmond, Virginia.